

What is claimed is:

1. An engine muffler including a first expansion chamber of the exhaust gas having an exhaust gas inlet connecting to an exhaust gas outlet aperture of an engine, a second expansion chamber having an outlet of exhaust gas, at least one exhaust gas purifier coated with a catalyst to purify the exhaust gas on the purifier having innumerable numbers of small holes comprising:

a wall of the second expansion chamber to which the engine is not installed is made a double wall construction with a predetermined distance.

2. The engine muffler according to the claim 1 wherein the wall to which the engine is installed is also made into the double wall construction with a predetermined distance.

3. The engine muffler according to the claim 1 wherein a heat insulating material is packed between the double walls.

4. The engine muffler according to the claim 1 wherein a catalyst is not applied to the first exhaust gas purifier when there is no particular restriction existed in gas purification concentration degree.

5. The engine muffler including the first expansion chamber of the exhaust gas having the gas inlet aperture connecting to the exhaust gas aperture of the engine and the second expansion chamber having the exhaust gas outlet aperture, at least one first exhaust gas purifier coated with a catalyst to purify the exhaust gas on the purifier having innumerable numbers of small holes, according to the present invention comprising:

a cover plate having an inlet aperture of the exhaust gas to cover the first exhaust gas purifier in the first expansion chamber,

a cover plate having an exhaust gas outlet aperture in the side of the

second expansion chamber,

a double wall construction with a predetermined distance between the walls.

6. The engine muffler according to the claim 5 wherein the double wall construction is made with a predetermined distance and the double walls are packed with a heat insulating material.

7. The engine muffler according to the claim 5 wherein the first exhaust gas purifier coated with a catalyst to purify the exhaust gas is not applied.

8. The engine muffler comprising:

to manufacture the cover plate of the first exhaust gas purifier in the first expansion chamber and the partition board as an integral unit and the cover plate of the first exhaust gas purifier in the second expansion chamber is fastened to the partition board with a bolt and a nut,

a construction of the wall of an open configuration to take out the first exhaust gas purifier to the outside of the muffler.

9. The engine muffler including the first expansion chamber of the exhaust gas having the exhaust gas inlet aperture connecting to the exhaust aperture of the engine, the second expansion chamber having the exhaust gas outlet aperture, at least one first exhaust gas purifier coated with a catalyst to purify the exhaust gas onto the purifier having innumerable numbers of small holes,

a second exhaust gas purifier coated with a catalyst to purify the exhaust gas through a plurality of through holes provided on an uneven recessed surface of the second purifier,

the second exhaust gas purifier is faced to the exhaust gas outlet of the

engine with the one open end of said second exhaust gas purifier.

side walls of the second expansion chamber being made to a double-wall construction with a predetermined distance.

10. The engine muffler according to the claim 9 wherein the double walls being made having a heat insulating material between them.

11. The engine muffler according to the claim 9 wherein said purifier coated with a catalyst is not applied.

12. The engine muffler including the first expansion chamber of the exhaust gas having the exhaust gas inlet connecting to engine's exhaust outlet, the second expansion chamber having the exhaust gas outlet, at least one first exhaust gas purifier provided with innumerable numbers of small holes and coated with a catalyst to purify the exhaust gas, the first expansion chamber side in this first exhaust gas purifier is covered with a cover plate having an introduction inlet of the exhaust gas, the second expansion chamber side of the first exhaust gas purifier is covered with a cover plate having a flow outlet of the exhaust gas,

a second exhaust gas purifier coated with a catalyst to purify the exhaust gas at least on an uneven recessed body having a plurality of through holes on the uneven recessed surface,

said second exhaust gas purifier is provided in the first expansion chamber facing to the exhaust gas outlet of the engine with one open end of said second exhaust gas purifier.

the surrounding wall is formed in a double-wall construction with a predetermined distance.

13. The engine muffler according to claim 12 wherein an exhaust gas purifier coated with a catalyst is not applied when no particular restriction of

the exhaust gas purification concentration degree is existed.

14. The engine muffler according to claim 12 wherein a heat insulating material is packed in said double-wall construction.